CLAIMS

1. An agonistic binding molecule capable of binding to and stimulating the human OX40-receptor.

2. A binding molecule according to claim 1, wherein the binding molecule is a human binding molecule.

3. A binding molecule according to claim 1 or 2, wherein the binding molecule comprises at least a CDR3 region comprising the amino acid sequence selected from the group consisting of SEQ ID NO:17 (DRYSQVHYALDY), SEQ ID NO:18 (DRYVNTSNAFDY), SEQ ID NO:19 (DMSGFHEFDY),SEQ ID NO:20 (DRYFRQQNAFDY),SEQ ID NO:21 (ARAAGTIFDY),SEQ ID NO:22 (DRYITLPNALDY),SEQ ID NO:23 (YDEPLTIYWFDS) and SEQ ID NO:24 (YDNVMGLYWFDY).

4. A binding molecule according to any one of the claims 1 - 3, wherein the binding molecule comprises a heavy chain comprising an amino acid sequence selected from the group consisting of SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27 and SEQ ID NO:28.

5. A functional variant of a binding molecule according to claim 3 or 4, wherein the functional variant is capable of competing for specifically binding to the human OX40-receptor.

6. An immunoconjugate comprising a binding molecule according to any one of the claims 1 - 4 or a functional variant according to claim 5, the immunoconjugate further comprising at least one tag.

7. A nucleic acid molecule encoding a binding molecule according to any one of the claims 1 - 4 or a functional variant according to claim 5.

8. A vector comprising at least one nucleic acid molecule according to claim 7.

9. A host comprising at least one vector according to claim 8.

10. A host according to claim 9, wherein the host is a cell derived from a human cell.

11. A method of producing a binding molecule according to any one of the claims 1 - 4 or a functional variant according to claim 5, wherein the method comprises the steps of:

a) culturing a host according to claim 9 or 10 under conditions conducive to the expression of the binding molecule or functional variant, and

b) optionally recovering the expressed binding molecule or functional variant.

12. A binding molecule or functional variant thereof as obtainable by the method according to claim 11.

13. A method of identifying a binding molecule specifically binding to the human OX40-receptor or a nucleic acid molecule encoding a binding molecule specifically binding to the human OX40-receptor, wherein the method comprises the steps of:

a) contacting a phage library of binding molecules with material comprising the human OX40-receptor,

b) selecting at least once for a phage binding to the material comprising the human OX40-receptor, and

c) separating and recovering the phage binding to the material comprising the human OX40-receptor.

14. A method of obtaining a binding molecule specifically binding to the human OX40-receptor or a nucleic acid molecule encoding a human binding molecule specifically binding to the human OX40-receptor, wherein the method comprises the steps of:

a) performing the method according to claim 13, and

b) isolating from the recovered phage the binding molecule and/or the nucleic acid molecule encoding the binding molecule.

15. A composition comprising a binding molecule according to any one of the claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, or a binding molecule or functional variant thereof according to claim 12.

16. A composition comprising a nucleic acid molecule according to claim 7.

17. A pharmaceutical composition comprising a binding molecule according to any one of the claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a binding molecule or functional variant thereof according to claim 12, or a composition according to claim 15 or 16,

the pharmaceutical composition further comprising at least one pharmaceutically acceptable excipient.

18. A pharmaceutical composition according to claim 17 further comprising at least one other therapeutic agent.

19. Use of a binding molecule according to any one of claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a binding molecule or functional variant thereof according to claim 12, a composition according to claim 15 or 16 or a pharmaceutical composition according to claim 17 or 18 for stimulating T-cells *in vitro*.

20. A binding molecule according to any one of claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a binding molecule or functional variant thereof according to claim 12, a composition according to claim 15 or 16 or a pharmaceutical composition according to claim 17 or 18 for use as a medicament.

21. A binding molecule according to any one of claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a binding molecule or functional variant thereof according to claim 12, a composition according to claim 15 or 16 or a pharmaceutical composition according to claim 17 or 18 for use in the treatment of a neoplastic, viral or bacterial disorder or disease.

22. A binding molecule according to any one of claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a binding molecule or functional variant thereof according to claim 12, a composition according to claim 15 or 16 or a pharmaceutical composition according to claim 17 or 18 for use in enhancing the immune response in a human or animal.

23. A binding molecule according to any one of claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a binding molecule or functional variant thereof according to claim 12, a composition according to claim 15 or 16 or a pharmaceutical composition according to claim 17 or 18 for use in enhancing the immune response against a tumour, bacterial or viral antigen in a human or animal.

24. Use of a binding molecule according to any one of claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a binding molecule or functional variant thereof according to claim 12, a composition according to claim 15 or 16 or a pharmaceutical composition according to claim 17 or 18 for the preparation of a medicament for the treatment of a neoplastic, viral or bacterial disorder or a disease.

25. Use of a binding molecule according to any one of claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a binding molecule or functional variant thereof according to claim 12, a composition according to claim 15 or 16 or a pharmaceutical composition according to claim 17 or 18 for the preparation of a medicament for enhancing the immune response in a human or animal.

26. Use of a binding molecule according to any one of claims 1 - 4, a functional variant according to claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a binding molecule or functional variant thereof according to claim 12, a composition according to claim 15 or 16 or a pharmaceutical composition according to claim 17 or 18 for the preparation of a medicament for enhancing the immune response against a tumour, bacterial or viral antigen in a human or animal.

27. A method for modulating a T-cell response in a human, comprising the step of administering to said human an effective dose of a binding molecule according to any one of the claims 1 - 4 or a functional variant of claim 5, an immunoconjugate according to claim 6, a nucleic acid molecule according to claim 7, a vector according to claim 8 or a pharmaceutical composition according to claim 17 or 18.

28. A method according to claim 27, wherein said modulation comprises the stimulation of T-cell proliferation.